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Modern theory foresees the possibility of forming atomic systems of a new type out of the elementary particles (1). For instance, positronium is formed from an electron and a positron. The para-positronium atom, with dimensions of the order of the hydrogen atom, is found to be unstable, as the electron and the positron may be converted into two photons in a mean interval of time of the order of 10^{-10} sec. Ortho-positronium is transformed with the emission of three photons, and its life is about 100 times as long. Likewise, it is possible to have molecules of two atoms of positronium as well as analogous systems consisting of a mesotron and an electron (mesotronium) or with two mesotrons (bi-mesotron). All of these systems will disintegrate after definite intervals of time. Their lives are at the limit of present-day methods of observation, and we must now expect the rapid discovery of similar metastable systems. Apparently, a whole new chapter in atomic chemistry will soon arise, devoted to these metastable ultralight isotopes, which will evidently be the first transhydrogens.

The first scientist bold enough to include the neutron in the periodic system and to identify it with the element "U" of D. I. Mendeleyev (placed in the zero group ahead of hydrogen) was Prof A. M. Vasil'yev of the Kazan Institute of Chemical Technology (2).

This outstanding discovery has not been really evaluated up to the present time. This true evaluation, it seems to me, should be confirmed by giving a new name to the neutron as an element of the periodic system. It should suggest that it be named "mendelevium" in honor of D. I. Mendeleyev. Some 12 years after A. M. Vasilyev's discovery a paper was published dealing with the problem of including the elementary particles in the periodic system and assigning them definite places therein. This was the paper of E. I. Akhumov (3).

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